LAND USE PLANNING AFTER EARTHQUAKES[1]

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This study has two objectives: 1) to determine why land use planning after earthquakes has not been more effective as a method of reducing seismic risk, and 2) to recommend ways to improve post-earthquake land use planning. The study stems from observations that typically little attention has been given to avoiding or restricting development or reconstruction in areas revealed by an earthquake as especially hazardous. An underlying concept of this project is that well-planned land use changes following an earthquake can effectively reduce risk from future earthquakes. Possible land use responses include changes in land use plans and regulations, changes in land use or occupancy, relocation of facilities, redevelopment, and land acquisition. Furthermore, it is believed that planning for reconstruction can take place without unreasonable delay or hardship.

Of course, many pressures foster rebuilding as rapidly as possible and tend to ignore longer-range land use planning issues. Quite naturally, the prevailing attitude after an earthquake is a desire to help those who have suffered injuries, disruption of their lives, and property damage. Given this attitude, actions to reduce future risk can be seen as interfering with rapid recovery. The overriding concern is with immediate needs, not with future disasters.

In addition, land use planning has tended to be ignored because of an emphasis on improving safety by rebuilding and repairing structures to withstand shaking better. Also, operating against effective land use planning after earthquakes is the very nature of land use changes--changes which can dramatically affect the value of land and are therefore politically very sensitive. Nonetheless, the potential role of land use planning after earthquakes is seen as very significant and worthy of investigation.

To deal with the questions relevant to post-earthquake land use planning, case studies of reconstruction after three recent U.S. earthquakes formed the major research base. The three case studies were selected to illustrate as broad a range of earthquake effects and response as possible. The selection of these earthquakes made it possible to interview people who participated in the post-earthquake reconstruction efforts, gave reasonable assurance that information on geologic and seismic effects and structural damage was at or close to the state-of-the-art, and set the investigations in the context of modern planning practices and procedures. In fact, the choice was very limited. From 1959 to 1978, eleven earthquakes occurred in the United States which